

FragScanTibo

0.1

Gegenereerd door Doxygen 1.8.18



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# Hoofdstuk 1

## Klasse Index

### 1.1 Klasse Lijst

Hieronder volgen de klassen, structs en unions met voor elk een korte beschrijving:

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## Hoofdstuk 2

# Bestand Index

### 2.1 Bestandslijst

Hieronder volgt de lijst met alle bestanden, elk met een korte beschrijving:

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## Hoofdstuk 3

# Klassen Documentatie

### 3.1 HMM Struct Referentie

```
#include <hmm.h>
```

#### Public Attributen

- double [pi](#) [29]
- int [N](#)
- double [tr](#) [14]
- double [e\\_M\\_1](#) [6][16][4]
- double [e\\_M](#) [6][16][4]
- double [tr\\_R\\_R](#) [4][4]
- double [tr\\_I\\_I](#) [4][4]
- double [tr\\_M\\_I](#) [4][4]
- double [tr\\_S](#) [61][64]
- double [tr\\_E](#) [61][64]
- double [tr\\_S\\_1](#) [61][64]
- double [tr\\_E\\_1](#) [61][64]
- double [S\\_dist](#) [6]
- double [E\\_dist](#) [6]
- double [S1\\_dist](#) [6]
- double [E1\\_dist](#) [6]

#### 3.1.1 Documentatie van data members

##### 3.1.1.1 E1\_dist

```
double E1_dist[6]
```

**3.1.1.2 E\_dist**

```
double E_dist[6]
```

**3.1.1.3 e\_M**

```
double e_M[6][16][4]
```

**3.1.1.4 e\_M\_1**

```
double e_M_1[6][16][4]
```

**3.1.1.5 N**

```
int N
```

**3.1.1.6 pi**

```
double pi[29]
```

**3.1.1.7 S1\_dist**

```
double S1_dist[6]
```

**3.1.1.8 S\_dist**

```
double S_dist[6]
```

**3.1.1.9 tr**

```
double tr[14]
```

**3.1.1.10 tr\_E**

```
double tr_E[61][64]
```

**3.1.1.11 tr\_E\_1**

```
double tr_E_1[61][64]
```

**3.1.1.12 tr\_I\_I**

```
double tr_I_I[4][4]
```

**3.1.1.13 tr\_M\_I**

```
double tr_M_I[4][4]
```

**3.1.1.14 tr\_R\_R**

```
double tr_R_R[4][4]
```

**3.1.1.15 tr\_S**

```
double tr_S[61][64]
```

**3.1.1.16 tr\_S\_1**

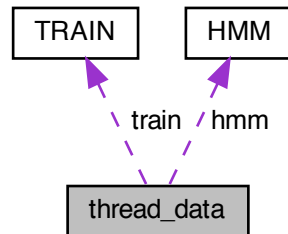
```
double tr_S_1[61][64]
```

De documentatie voor deze struct is gegenereerd op grond van het volgende bestand:

- FragGeneScan1.31/[hmm.h](#)

## 3.2 thread\_data Struct Referentie

Collaboratie diagram voor thread\_data:



### Public Attributen

- FILE \* **out**
- FILE \* **aa**
- FILE \* **dna**
- char \* **obs\_head**
- char \* **obs\_seq**
- int **wholegenome**
- int **cg**
- int **format**
- HMM \* **hmm**
- TRAIN \* **train**

### 3.2.1 Documentatie van data members

#### 3.2.1.1 aa

```
FILE* aa
```

#### 3.2.1.2 cg

```
int cg
```

### 3.2.1.3 dna

FILE\* dna

### 3.2.1.4 format

int format

### 3.2.1.5 hmm

HMM\* hmm

### 3.2.1.6 obs\_head

char\* obs\_head

### 3.2.1.7 obs\_seq

char\* obs\_seq

### 3.2.1.8 out

FILE\* out

### 3.2.1.9 train

TRAIN\* train

### 3.2.1.10 wholegenome

```
int wholegenome
```

De documentatie voor deze struct is gegenereerd op grond van het volgende bestand:

- FragGeneScan1.31/[run\\_hmm.c](#)

## 3.3 TRAIN Struct Referentie

```
#include <hmm.h>
```

### Public Attributen

- double [trans](#) [44][6][16][4]
- double [rtrans](#) [44][6][16][4]
- double [noncoding](#) [44][4][4]
- double [start](#) [44][61][64]
- double [stop](#) [44][61][64]
- double [start1](#) [44][61][64]
- double [stop1](#) [44][61][64]
- double [S\\_dist](#) [44][6]
- double [E\\_dist](#) [44][6]
- double [S1\\_dist](#) [44][6]
- double [E1\\_dist](#) [44][6]

### 3.3.1 Documentatie van data members

#### 3.3.1.1 E1\_dist

```
double E1_dist[44][6]
```

#### 3.3.1.2 E\_dist

```
double E_dist[44][6]
```

#### 3.3.1.3 noncoding

```
double noncoding[44][4][4]
```



**3.3.1.4 rtrans**

```
double rtrans[44][6][16][4]
```

**3.3.1.5 S1\_dist**

```
double S1_dist[44][6]
```

**3.3.1.6 S\_dist**

```
double S_dist[44][6]
```

**3.3.1.7 start**

```
double start[44][61][64]
```

**3.3.1.8 start1**

```
double start1[44][61][64]
```

**3.3.1.9 stop**

```
double stop[44][61][64]
```

**3.3.1.10 stop1**

```
double stop1[44][61][64]
```

**3.3.1.11 trans**

```
double trans[44][6][16][4]
```

De documentatie voor deze struct is gegenereerd op grond van het volgende bestand:

- [FragGeneScan1.31/hmm.h](#)



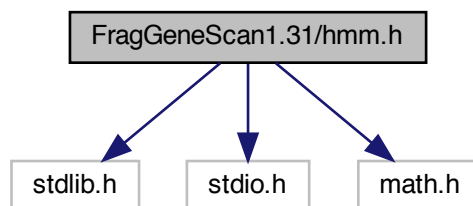
## Hoofdstuk 4

# Bestand Documentatie

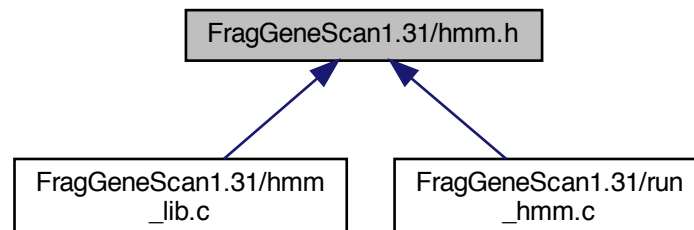
### 4.1 FragGeneScan1.31/hmm.h Bestand Referentie

```
#include <stdlib.h>
#include <stdio.h>
#include <math.h>
```

Include afhankelijkheidsgraaf voor hmm.h:



Deze graaf geeft aan welke bestanden direct of indirect afhankelijk zijn van dit bestand:



## Klassen

- struct [HMM](#)
- struct [TRAIN](#)

## Macros

- `#define` [A](#) 0
- `#define` [C](#) 1
- `#define` [G](#) 2
- `#define` [T](#) 3
- `#define` [NUM\\_STATE](#) 29
- `#define` [NOSTATE](#) -1
- `#define` [S\\_STATE](#) 0
- `#define` [E\\_STATE](#) 1
- `#define` [R\\_STATE](#) 2
- `#define` [S\\_STATE\\_1](#) 3
- `#define` [E\\_STATE\\_1](#) 4
- `#define` [M1\\_STATE](#) 5
- `#define` [M2\\_STATE](#) 6
- `#define` [M3\\_STATE](#) 7
- `#define` [M4\\_STATE](#) 8
- `#define` [M5\\_STATE](#) 9
- `#define` [M6\\_STATE](#) 10
- `#define` [M1\\_STATE\\_1](#) 11
- `#define` [M2\\_STATE\\_1](#) 12
- `#define` [M3\\_STATE\\_1](#) 13
- `#define` [M4\\_STATE\\_1](#) 14
- `#define` [M5\\_STATE\\_1](#) 15
- `#define` [M6\\_STATE\\_1](#) 16
- `#define` [I1\\_STATE](#) 17
- `#define` [I2\\_STATE](#) 18
- `#define` [I3\\_STATE](#) 19
- `#define` [I4\\_STATE](#) 20
- `#define` [I5\\_STATE](#) 21
- `#define` [I6\\_STATE](#) 22
- `#define` [I1\\_STATE\\_1](#) 23
- `#define` [I2\\_STATE\\_1](#) 24
- `#define` [I3\\_STATE\\_1](#) 25
- `#define` [I4\\_STATE\\_1](#) 26
- `#define` [I5\\_STATE\\_1](#) 27
- `#define` [I6\\_STATE\\_1](#) 28
- `#define` [TR\\_MM](#) 0
- `#define` [TR\\_MI](#) 1
- `#define` [TR\\_MD](#) 2
- `#define` [TR\\_II](#) 3
- `#define` [TR\\_IM](#) 4
- `#define` [TR\\_DD](#) 5
- `#define` [TR\\_DM](#) 6
- `#define` [TR\\_GE](#) 7
- `#define` [TR\\_GG](#) 8
- `#define` [TR\\_ER](#) 9
- `#define` [TR\\_RS](#) 10
- `#define` [TR\\_RR](#) 11
- `#define` [TR\\_ES](#) 12
- `#define` [TR\\_ES1](#) 13

## Functies

- int [get\\_prob\\_from\\_cg](#) (HMM \*hmm, [TRAIN](#) \*train, char \*O)
- void [get\\_train\\_from\\_file](#) (char \*filename, [HMM](#) \*hmm\_ptr, char \*mfilename, char \*mfilename1, char \*nfilename, char \*sfilename, char \*pfilename, char \*s1filename, char \*p1filename, char \*dfilename, [TRAIN](#) \*train\_ptr)
- void [viterbi](#) (HMM \*hmm\_ptr, [TRAIN](#) \*train\_ptr, char \*O, FILE \*out\_filename, FILE \*log\_filename, FILE \*dna\_filename, char \*head, int metagene, int cg, int format)
- void [free\\_hmm](#) (HMM \*hmm)
- void [get\\_protein](#) (char \*dna, char \*protein, int strand, int whole\_genome)
- void [get\\_rc\\_dna](#) (char \*dna, char \*dna1)
- void [get\\_corrected\\_dna](#) (char \*dna, char \*dna\_f)

### 4.1.1 Documentatie van macro's

#### 4.1.1.1 A

```
#define A 0
```

#### 4.1.1.2 C

```
#define C 1
```

#### 4.1.1.3 E\_STATE

```
#define E_STATE 1
```

#### 4.1.1.4 E\_STATE\_1

```
#define E_STATE_1 4
```

#### 4.1.1.5 G

```
#define G 2
```

**4.1.1.6 I1\_STATE**

```
#define I1_STATE 17
```

**4.1.1.7 I1\_STATE\_1**

```
#define I1_STATE_1 23
```

**4.1.1.8 I2\_STATE**

```
#define I2_STATE 18
```

**4.1.1.9 I2\_STATE\_1**

```
#define I2_STATE_1 24
```

**4.1.1.10 I3\_STATE**

```
#define I3_STATE 19
```

**4.1.1.11 I3\_STATE\_1**

```
#define I3_STATE_1 25
```

**4.1.1.12 I4\_STATE**

```
#define I4_STATE 20
```

**4.1.1.13 I4\_STATE\_1**

```
#define I4_STATE_1 26
```

**4.1.1.14 I5\_STATE**

```
#define I5_STATE 21
```

**4.1.1.15 I5\_STATE\_1**

```
#define I5_STATE_1 27
```

**4.1.1.16 I6\_STATE**

```
#define I6_STATE 22
```

**4.1.1.17 I6\_STATE\_1**

```
#define I6_STATE_1 28
```

**4.1.1.18 M1\_STATE**

```
#define M1_STATE 5
```

**4.1.1.19 M1\_STATE\_1**

```
#define M1_STATE_1 11
```

**4.1.1.20 M2\_STATE**

```
#define M2_STATE 6
```

**4.1.1.21 M2\_STATE\_1**

```
#define M2_STATE_1 12
```

**4.1.1.22 M3\_STATE**

```
#define M3_STATE 7
```

**4.1.1.23 M3\_STATE\_1**

```
#define M3_STATE_1 13
```

**4.1.1.24 M4\_STATE**

```
#define M4_STATE 8
```

**4.1.1.25 M4\_STATE\_1**

```
#define M4_STATE_1 14
```

**4.1.1.26 M5\_STATE**

```
#define M5_STATE 9
```

**4.1.1.27 M5\_STATE\_1**

```
#define M5_STATE_1 15
```

**4.1.1.28 M6\_STATE**

```
#define M6_STATE 10
```

**4.1.1.29 M6\_STATE\_1**

```
#define M6_STATE_1 16
```



**4.1.1.30 NOSTATE**

```
#define NOSTATE -1
```

**4.1.1.31 NUM\_STATE**

```
#define NUM_STATE 29
```

**4.1.1.32 R\_STATE**

```
#define R_STATE 2
```

**4.1.1.33 S\_STATE**

```
#define S_STATE 0
```

**4.1.1.34 S\_STATE\_1**

```
#define S_STATE_1 3
```

**4.1.1.35 T**

```
#define T 3
```

**4.1.1.36 TR\_DD**

```
#define TR_DD 5
```

**4.1.1.37 TR\_DM**

```
#define TR_DM 6
```

**4.1.1.38 TR\_ER**

```
#define TR_ER 9
```

**4.1.1.39 TR\_ES**

```
#define TR_ES 12
```

**4.1.1.40 TR\_ES1**

```
#define TR_ES1 13
```

**4.1.1.41 TR\_GE**

```
#define TR_GE 7
```

**4.1.1.42 TR\_GG**

```
#define TR_GG 8
```

**4.1.1.43 TR\_II**

```
#define TR_II 3
```

**4.1.1.44 TR\_IM**

```
#define TR_IM 4
```

**4.1.1.45 TR\_MD**

```
#define TR_MD 2
```

#### 4.1.1.46 TR\_MI

```
#define TR_MI 1
```

#### 4.1.1.47 TR\_MM

```
#define TR_MM 0
```

#### 4.1.1.48 TR\_RR

```
#define TR_RR 11
```

#### 4.1.1.49 TR\_RS

```
#define TR_RS 10
```

### 4.1.2 Documentatie van functies

#### 4.1.2.1 free\_hmm()

```
void free_hmm (  
    HMM * hmm )
```

Hier is de call graaf voor deze functie:



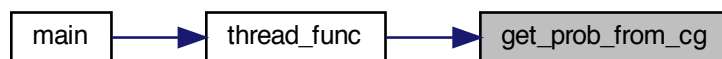
#### 4.1.2.2 get\_corrected\_dna()

```
void get_corrected_dna (  
    char * dna,  
    char * dna_f )
```

#### 4.1.2.3 get\_prob\_from\_cg()

```
int get_prob_from_cg (  
    HMM * hmm,  
    TRAIN * train,  
    char * O )
```

Hier is de caller graaf voor deze functie:



#### 4.1.2.4 get\_protein()

```
void get_protein (  
    char * dna,  
    char * protein,  
    int strand,  
    int whole_genome )
```

Hier is de caller graaf voor deze functie:



#### 4.1.2.5 get\_rc\_dna()

```
void get_rc_dna (
    char * dna,
    char * dna1 )
```

Hier is de call graaf voor deze functie:



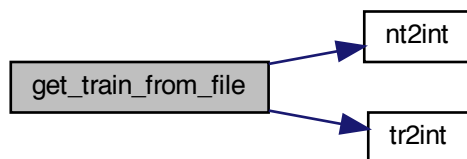
Hier is de caller graaf voor deze functie:



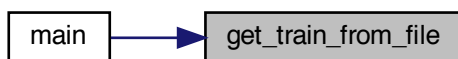
#### 4.1.2.6 get\_train\_from\_file()

```
void get_train_from_file (
    char * filename,
    HMM * hmm_ptr,
    char * mfilename,
    char * mfilename1,
    char * nfilename,
    char * sfilename,
    char * pfilename,
    char * slfilename,
    char * plfilename,
    char * dfilename,
    TRAIN * train_ptr )
```

Hier is de call graaf voor deze functie:



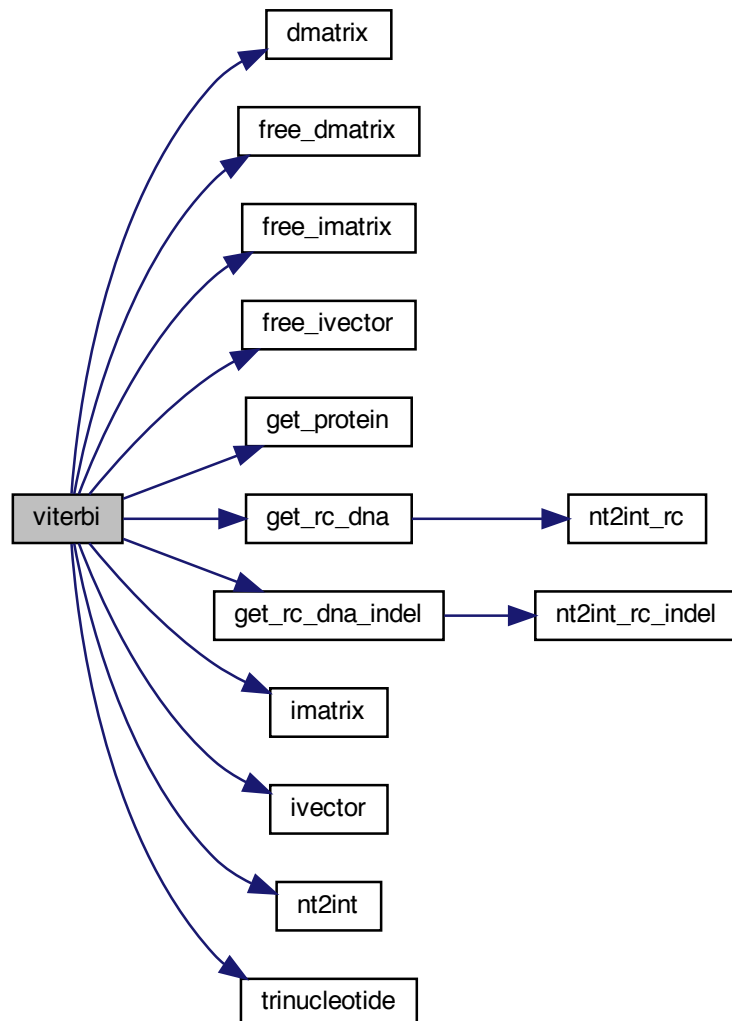
Hier is de caller graaf voor deze functie:



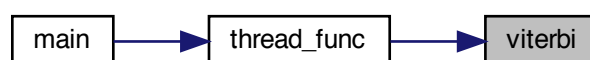
#### 4.1.2.7 viterbi()

```
void viterbi (
    HMM * hmm_ptr,
    TRAIN * train_ptr,
    char * O,
    FILE * out_filename,
    FILE * log_filename,
    FILE * dna_filename,
    char * head,
    int metagene,
    int cg,
    int format )
```

Hier is de call graaf voor deze functie:



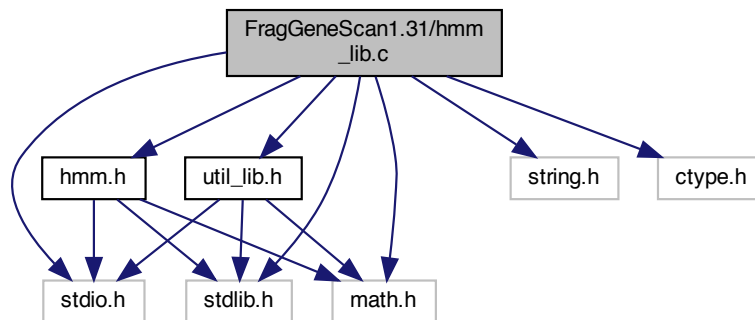
Hier is de caller graaf voor deze functie:



## 4.2 FragGeneScan1.31/hmm\_lib.c Bestand Referentie

```
#include <stdio.h>
#include <math.h>
#include <string.h>
#include <stdlib.h>
#include <ctype.h>
#include "hmm.h"
#include "util_lib.h"
```

Include afhankelijkheidsgraaf voor hmm\_lib.c:



### Functies

- void `dump_memory` (void \*p, int size)
- void `viterbi` (HMM \*hmm\_ptr, TRAIN \*train\_ptr, char \*O, FILE \*fp\_out, FILE \*fp\_aa, FILE \*fp\_dna, char \*head, int whole\_genome, int cg, int format)
- int `get_prob_from_cg` (HMM \*hmm\_ptr, TRAIN \*train\_ptr, char \*O)
- void `get_train_from_file` (char \*filename, HMM \*hmm\_ptr, char \*mfilename, char \*mfilename1, char \*nfilename, char \*sfilename, char \*pfilename, char \*s1filename, char \*p1filename, char \*dfilename, TRAIN \*train\_ptr)
- void `free_hmm` (HMM \*hmm\_ptr)

### 4.2.1 Documentatie van functies

#### 4.2.1.1 dump\_memory()

```
void dump_memory (
    void * p,
    int size )
```



#### 4.2.1.2 free\_hmm()

```
void free_hmm (
    HMM * hmm_ptr )
```

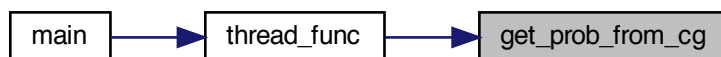
Hier is de call graaf voor deze functie:



#### 4.2.1.3 get\_prob\_from\_cg()

```
int get_prob_from_cg (
    HMM * hmm_ptr,
    TRAIN * train_ptr,
    char * O )
```

Hier is de caller graaf voor deze functie:

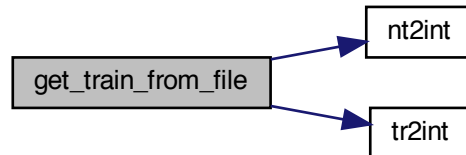


#### 4.2.1.4 get\_train\_from\_file()

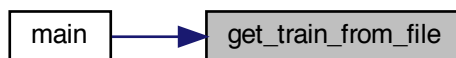
```
void get_train_from_file (
    char * filename,
    HMM * hmm_ptr,
    char * mfilename,
    char * mfilename1,
    char * nfilename,
    char * sfilename,
    char * pfilename,
    char * slfilename,
    char * plfilename,
```

```
char * dfilename,  
TRAIN * train_ptr )
```

Hier is de call graaf voor deze functie:



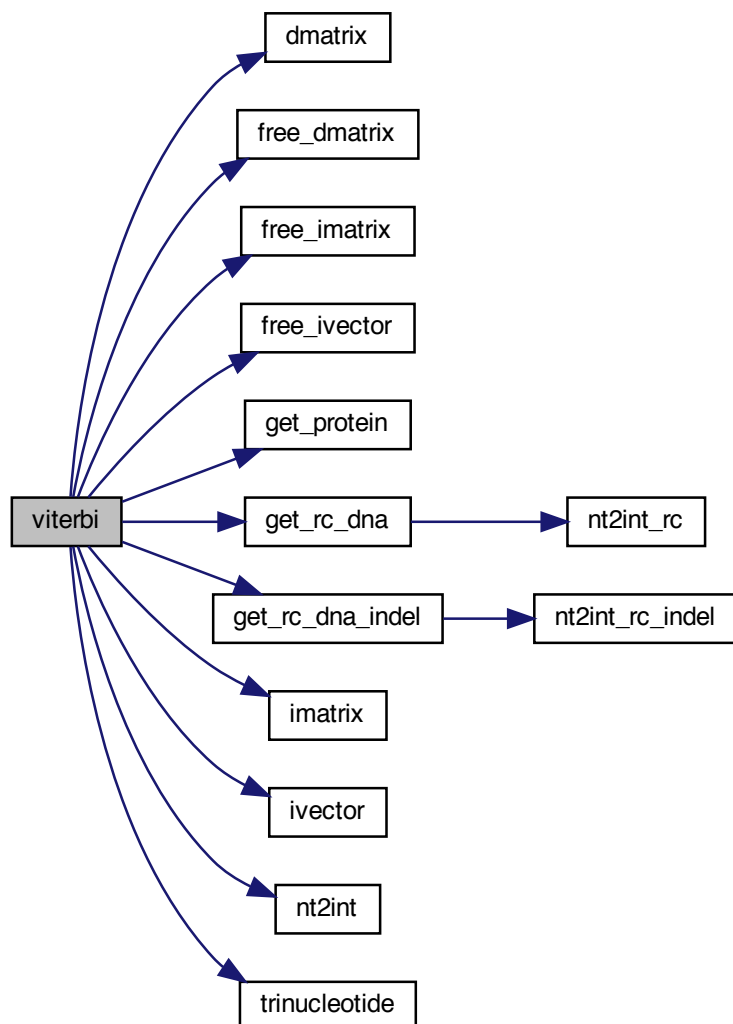
Hier is de caller graaf voor deze functie:



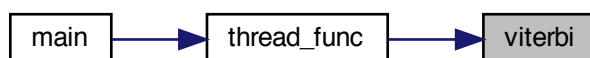
#### 4.2.1.5 viterbi()

```
void viterbi (  
    HMM * hmm_ptr,  
    TRAIN * train_ptr,  
    char * O,  
    FILE * fp_out,  
    FILE * fp_aa,  
    FILE * fp_dna,  
    char * head,  
    int whole_genome,  
    int cg,  
    int format )
```

Hier is de call graaf voor deze functie:



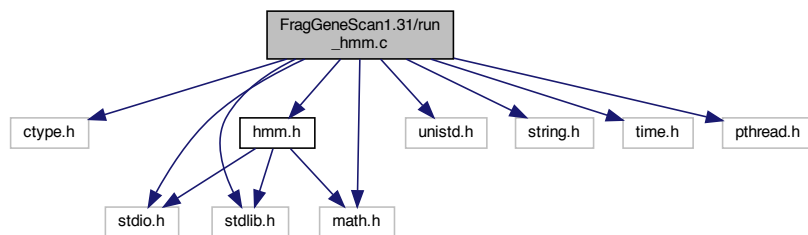
Hier is de caller graaf voor deze functie:



### 4.3 FragGeneScan1.31/run\_hmm.c Bestand Referentie

```
#include <ctype.h>
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <unistd.h>
#include <string.h>
#include <time.h>
#include "hmm.h"
#include <pthread.h>
```

Include afhankelijkheidsgraaf voor run\_hmm.c:



#### Klassen

- struct [thread\\_data](#)

#### Macros

- #define [ADD\\_LEN](#) 1024
- #define [STRINGLEN](#) 4096

#### Typedefs

- typedef struct [thread\\_data](#) [thread\\_data](#)

#### Funcities

- void \* [thread\\_func](#) (void \*threadarr)
- int [main](#) (int argc, char \*\*argv)
- int [appendSeq](#) (char \*input, char \*\*seq, int input\_max)

#### 4.3.1 Documentatie van macro's

#### 4.3.1.1 ADD\_LEN

```
#define ADD_LEN 1024
```

#### 4.3.1.2 STRINGLEN

```
#define STRINGLEN 4096
```

### 4.3.2 Documentatie van typedefs

#### 4.3.2.1 thread\_data

```
typedef struct thread_data thread_data
```

### 4.3.3 Documentatie van functies

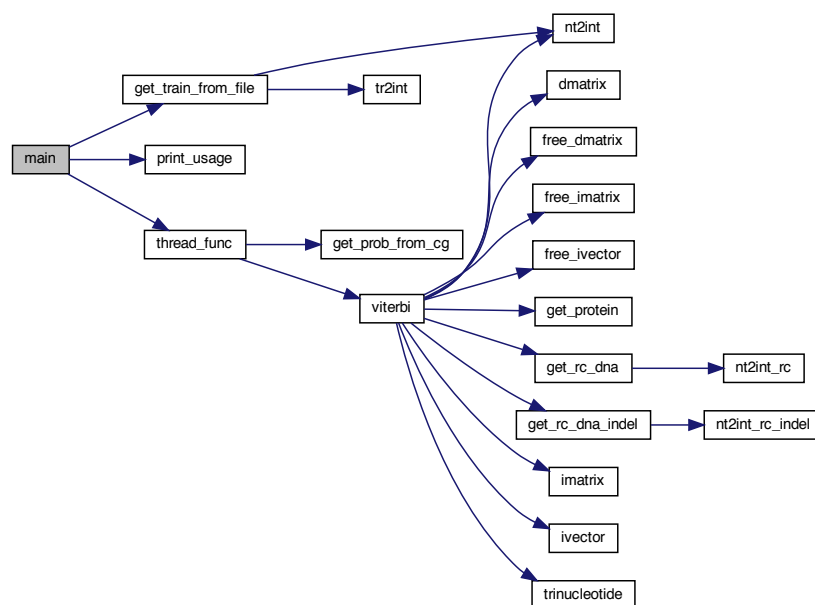
#### 4.3.3.1 appendSeq()

```
int appendSeq (
    char * input,
    char ** seq,
    int input_max )
```

#### 4.3.3.2 main()

```
int main (
    int argc,
    char ** argv )
```

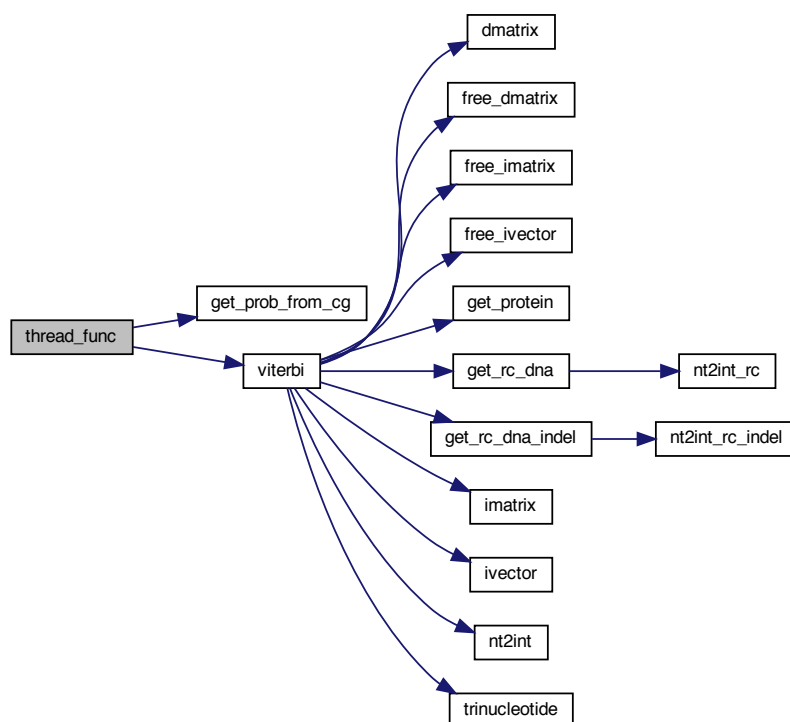
Hier is de call graaf voor deze functie:



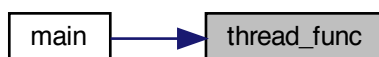
#### 4.3.3.3 thread\_func()

```
void * thread_func (
    void * threadarr )
```

Hier is de call graaf voor deze functie:



Hier is de caller graaf voor deze functie:



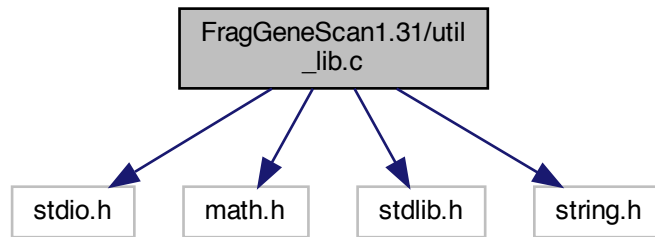
## 4.4 FragGeneScan1.31/util\_lib.c Bestand Referentie

```

#include <stdio.h>
#include <math.h>
#include <stdlib.h>
#include <string.h>

```

Include afhankelijkheidsgraaf voor util\_lib.c:



## Functies

- double `log2` (double a)
- double \*\* `dmatrix` (int num\_row, int num\_col)
- int \*\* `imatrix` (int num\_row, int num\_col)
- double \* `dvector` (int nh)
- int \* `ivector` (int nh)
- void `free_dvector` (double \*v)
- void `free_ivector` (int \*v)
- void `free_dmatrix` (double \*\*m, int num\_row)
- void `free_imatrix` (int \*\*m, int num\_row)
- int `tr2int` (char \*tr)
- int `nt2int` (char nt)
- int `nt2int_rc` (char nt)
- int `nt2int_rc_indel` (char nt)
- int `trinucleotide` (char a, char b, char c)
- int `trinucleotide_pep` (char a, char b, char c)
- void `get_rc_dna` (char \*dna, char \*dna1)
- void `get_rc_dna_indel` (char \*dna, char \*dna1)
- void `get_protein` (char \*dna, char \*protein, int strand, int whole\_genome)
- void `print_usage` ()

### 4.4.1 Documentatie van functies

#### 4.4.1.1 `dmatrix()`

```
double** dmatrix (
    int num_row,
    int num_col )
```



Hier is de caller graaf voor deze functie:



#### 4.4.1.2 dvector()

```
double* dvector (
    int nh )
```

#### 4.4.1.3 free\_dmatrix()

```
void free_dmatrix (
    double ** m,
    int num_row )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.4 free\_dvector()

```
void free_dvector (
    double * v )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.5 free\_imatrix()

```
void free_imatrix (
    int ** m,
    int num_row )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.6 free\_ivector()

```
void free_ivector (
    int * v )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.7 get\_protein()

```
void get_protein (
    char * dna,
    char * protein,
    int strand,
    int whole_genome )
```

Hier is de call graaf voor deze functie:



Hier is de caller graaf voor deze functie:



#### 4.4.1.8 `get_rc_dna()`

```
void get_rc_dna (
    char * dna,
    char * dna1 )
```

Hier is de call graaf voor deze functie:



Hier is de caller graaf voor deze functie:



#### 4.4.1.9 `get_rc_dna_indel()`

```
void get_rc_dna_indel (
    char * dna,
    char * dna1 )
```

Hier is de call graaf voor deze functie:



Hier is de caller graaf voor deze functie:



#### 4.4.1.10 imatrix()

```
int** imatrix (  
    int num_row,  
    int num_col )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.11 ivector()

```
int* ivector (  
    int nh )
```

Hier is de caller graaf voor deze functie:



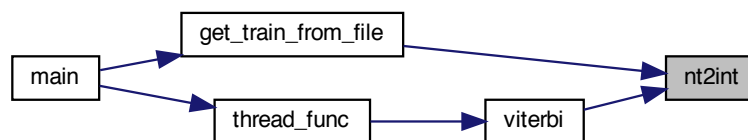
#### 4.4.1.12 log2()

```
double log2 (  
    double a )
```

#### 4.4.1.13 nt2int()

```
int nt2int (  
    char nt )
```

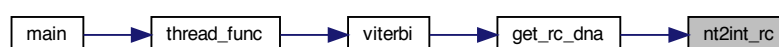
Hier is de caller graaf voor deze functie:



#### 4.4.1.14 nt2int\_rc()

```
int nt2int_rc (  
    char nt )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.15 nt2int\_rc\_indel()

```
int nt2int_rc_indel (  
    char nt )
```

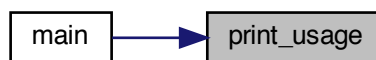
Hier is de caller graaf voor deze functie:



#### 4.4.1.16 print\_usage()

```
void print_usage ( )
```

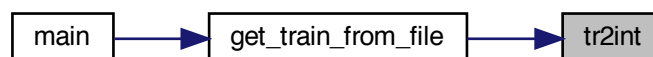
Hier is de caller graaf voor deze functie:



#### 4.4.1.17 tr2int()

```
int tr2int (  
    char * tr )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.18 trinucleotide()

```
int trinucleotide (  
    char a,  
    char b,  
    char c )
```

Hier is de caller graaf voor deze functie:



#### 4.4.1.19 trinucleotide\_pep()

```
int trinucleotide_pep (  
    char a,  
    char b,  
    char c )
```

Hier is de caller graaf voor deze functie:

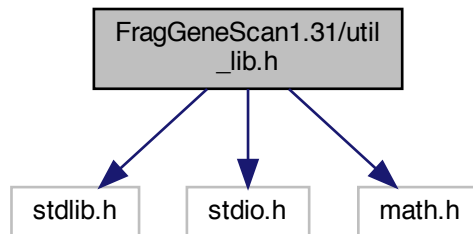


## 4.5 FragGeneScan1.31/util\_lib.h Bestand Referentie

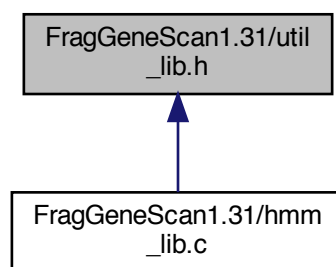
```
#include <stdlib.h>  
#include <stdio.h>
```

```
#include <math.h>
```

Include afhankelijkheidsgraaf voor util\_lib.h:



Deze graaf geeft aan welke bestanden direct of indirect afhankelijk zijn van dit bestand:



## Functies

- double \*\* [dmatrix](#) (int num\_row, int num\_col)
- double \* [dvector](#) (int nh)
- int \*\* [imatrix](#) (int num\_row, int num\_col)
- int \* [ivector](#) (int nh)
- void [free\\_dvector](#) (double \*v)
- void [free\\_dmatrix](#) (double \*\*m, int num\_row)
- void [free\\_ivector](#) (int \*v)
- void [free\\_imatrix](#) (int \*\*m, int num\_row)
- int [tr2int](#) (char \*nt)
- int [nt2int](#) (char nt)
- int [nt2int\\_rc](#) (char nt)
- int [trinucleotide](#) (char a, char b, char c)
- double [log2](#) (double a)
- void [get\\_protein](#) (char \*dna, char \*protein, int strand, int whole\_genome)
- void [print\\_usage](#) ()



## 4.5.1 Documentatie van functies

### 4.5.1.1 dmatrix()

```
double** dmatrix (  
    int num_row,  
    int num_col )
```

Hier is de caller graaf voor deze functie:



### 4.5.1.2 dvector()

```
double* dvector (  
    int nh )
```

### 4.5.1.3 free\_dmatrix()

```
void free_dmatrix (  
    double ** m,  
    int num_row )
```

Hier is de caller graaf voor deze functie:



#### 4.5.1.4 free\_dvector()

```
void free_dvector (  
    double * v )
```

Hier is de caller graaf voor deze functie:



#### 4.5.1.5 free\_imatrix()

```
void free_imatrix (  
    int ** m,  
    int num_row )
```

Hier is de caller graaf voor deze functie:



#### 4.5.1.6 free\_ivector()

```
void free_ivector (  
    int * v )
```

Hier is de caller graaf voor deze functie:



#### 4.5.1.7 get\_protein()

```
void get_protein (
    char * dna,
    char * protein,
    int strand,
    int whole_genome )
```

Hier is de call graaf voor deze functie:



#### 4.5.1.8 imatrix()

```
int** imatrix (
    int num_row,
    int num_col )
```

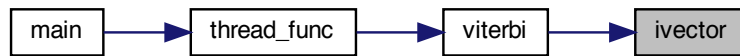
Hier is de caller graaf voor deze functie:



#### 4.5.1.9 ivector()

```
int* ivector (
    int nh )
```

Hier is de caller graaf voor deze functie:



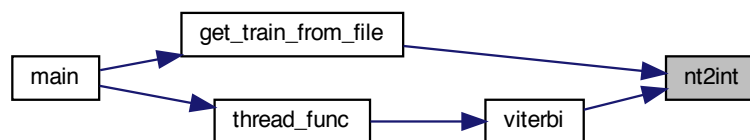
#### 4.5.1.10 log2()

```
double log2 (  
    double a )
```

#### 4.5.1.11 nt2int()

```
int nt2int (  
    char nt )
```

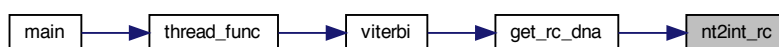
Hier is de caller graaf voor deze functie:



#### 4.5.1.12 nt2int\_rc()

```
int nt2int_rc (  
    char nt )
```

Hier is de caller graaf voor deze functie:



#### 4.5.1.13 print\_usage()

```
void print_usage ( )
```

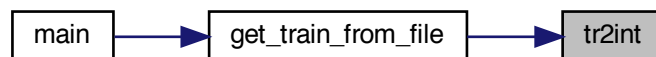
Hier is de caller graaf voor deze functie:



#### 4.5.1.14 tr2int()

```
int tr2int (
    char * nt )
```

Hier is de caller graaf voor deze functie:



#### 4.5.1.15 trinucleotide()

```
int trinucleotide (
    char a,
    char b,
    char c )
```

Hier is de caller graaf voor deze functie:



